

WHAT IS CLAIMED IS:

1. A microprobe for testing an electronic device, the microprobe comprising:

a silicon substrate, whose one side is etched in a certain depth, having a via hole in

5 another side;

a conductive layer that filled the via hole;

a cantilever type conductive spring unit electrically connected to the conductive layer,
wherein one edge portion of the spring unit is supported only on the surface adjacent to the
via hole and the other portion of the spring unit is spaced from the etched surface of the
10 silicon substrate; and

a conductive tip portion formed on the other edge portion of the spring unit.

2. The microprobe of claim 1, wherein the spring unit is made of any one of copper,
nickel, nickel-tungsten, nickel-chromium, tungsten and various kinds of plating alloys.

3. The microprobe of claim 1, wherein the tip portion is made of any one of copper,
nickel, nickel-tungsten, nickel-chromium, tungsten and various kinds of plating alloys.

4. The microprobe of claim 1, wherein a seed layer is formed between the spring unit
20 and the conductive layer in the same pattern as the spring unit,

5. The microprobe of claim 4, wherein the seed layer is made of any one of titanium-
gold, titanium-copper, chromium-gold and chromium-copper.

6. A method of manufacturing a microprobe for testing an electronic device,

comprising:

forming a via hole in a portion of a silicon substrate;

forming a first conductive layer in the via hole;

after forming an opening on a portion of one surface of the silicon substrate, forming
5 a seed layer on the exposed silicon substrate in the opening and the first conductive layer of
the via hole;

forming a pattern of a conductive spring unit on the seed layer as to overlap all the via
hole and the opening;

forming a conductive tip portion on a leading end of the spring unit;

10 etching the seed layer that is not covered with the spring unit; and

etching the silicon substrate under the spring unit.

7. The method of claim 6, wherein said forming the pattern of the spring unit
comprises:

15 forming a pattern of a photoresist having a window overlapping all the via hole and
the opening; and

forming a pattern of a second conductive layer for the spring unit only in the window
of the photoresist.

20 8. The method of claim 7, wherein the spring unit is formed by a plating method.

9. The method of claim 8, wherein the spring unit is made of any one of copper,
nickel, nickel-tungsten, nickel-chromium, tungsten and various kinds of plating alloys.

25 10. The method of claim 6, wherein said forming the tip portion comprises:

forming a pattern of a photoresist having a window exposing a leading end of the spring unit on the spring unit and the seed layer; and

forming a pattern of a third conductive layer for the tip portion only in the window of the photoresist.

5

11. The method of claim 10, wherein the tip portion is formed by a plating method.

12. The method of claim 11, wherein the tip portion is made of any one of copper, nickel, nickel-tungsten, nickel-chromium, tungsten and various kinds of plating alloys.

10

13. The method of claim 6, wherein the silicon substrate under the spring unit is isotropically etched.

14. The method of claim 13, wherein the silicon substrate is isotropically wet-etched using any one of etching solutions including tetramethylammonium hydroxide (TMAH), KOH and ethyl diamine pyrocatechol (EDP).

15

15. The method of claim 13, wherein the silicon substrate is dry-etched by a reactive ion etching and an inductively coupled plasma etching.

20

16. The method of claim 6, wherein said forming the first conductive layer comprises:

putting the silicon substrate having the via hole into electrolyte for the first conductive layer;

filling the via hole with the electrolyte by applying a certain pressure to the surface of

25

the electrolyte; and

leaving the first conductive layer only in the via hole by pulling out the silicon substrate from the electrolyte and polishing both surfaces of the silicon substrate.

- 5 17. The method of claim 16, wherein the electrolyte is any one of electrolyte including lead/tin and electrolyte including solder.